

**APPENDIX NIM
(NETWORK INTERCONNECTION METHODS)**

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**APPENDIX NIM
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VI. 1. INTRODUCTION

- 1.1 This Appendix sets forth the terms and conditions that Network Interconnection Methods (NIM) is provided by the applicable SBC Communications Inc. (SBC) owned Incumbent Local Exchange Carrier (ILEC) and CLEC. This Appendix describes the physical architecture for Interconnection of the Parties' facilities and equipment for the transmission and routing of Telephone Exchange Service traffic and Exchange Access traffic between the respective Customers of the Parties pursuant to Section 251(c)(2) of the Act; provided, however, Interconnection may not be used solely for the purpose of originating a Party's own interexchange traffic.
- 1.2 SBC Communications Inc. (SBC) means the holding company which owns the following ILECs: Illinois Bell Telephone Company, Indiana Bell Telephone Company Incorporated, Michigan Bell Telephone Company, Nevada Bell Telephone Company, The Ohio Bell Telephone Company, Pacific Bell Telephone Company, The Southern New England Telephone Company, Southwestern Bell Telephone Company and/or Wisconsin Bell, Inc. d/b/a Ameritech Wisconsin.
- 1.3 **SBC-13 STATE** - As used herein, **SBC-13 STATE** means the above listed ILECs doing business in Missouri, Kansas, Arkansas, Oklahoma, Texas, California, Connecticut, Nevada, Illinois, Indiana, Michigan, Ohio and Wisconsin.
- 1.4 **SBC-SWBT** - As used herein, **SBC-SWBT** means the above listed ILEC doing business in Missouri, Kansas, Arkansas, Oklahoma, and Texas.
- 1.5 **PACIFIC** - As used herein, **PACIFIC** means the above listed ILEC doing business in California.
- 1.6 **NEVADA** - As used herein, **NEVADA** means the above listed ILEC doing business in Nevada.
- 1.7 **SNET** - As used herein, **SNET** means the above listed ILEC doing business in Connecticut.
- 1.8 **SBC-AMERITECH** - As used herein, **SBC-AMERITECH** means the above listed ILECS doing business in Illinois, Indiana, Michigan, Ohio and Wisconsin.
- 1.9 Network Interconnection Methods (NIMs) include, but are not limited to, Physical Collocation Interconnection; Virtual Collocation Interconnection; Leased Facilities Interconnection; Fiber Meet Interconnection; and other methods as mutually agreed to by the Parties. One or more of these methods may be used to effect the

Interconnection in each local exchange area (in **SBC-SWBT**) and each LATA (in **SNET**, **PACIFIC**, **NEVADA**, **SBC-AMERITECH**). One or more of these methods may be used to effect the Interconnection in each LATA where CLEC provides Local Exchange Services.

1.9.1 Trunking requirements associated with Interconnection (including local exchange and LATA trunking requirements) are contained in Appendix ITR.

1.9.2 Interconnection associated with Unbundled Network Elements (UNEs) is contained in Appendix UNE. For **SNET** Interconnection associated with Unbundled Network Elements is offered from the Connecticut Access Tariff.

1.10 **SBC-13STATE** shall provide Interconnection for CLEC's facilities and equipment for the transmission and routing of telephone exchange service and exchange access, at a level of quality that is equal to that which **SBC-13STATE** provides itself, a subsidiary, an affiliate, or any other party to which **SBC-13STATE** provides Interconnection and on rates, terms and conditions that are just, reasonable and non-discriminatory.

1.11 The Parties shall effect an Interconnection that is efficient, fair and equitable.

2. PHYSICAL ARCHITECTURE

2.1 **SBC-13STATE**'s network is partly comprised of End Office switches, Tandem switches that serve local only traffic (**SBC-SWBT**), Tandem switches that serve IntraLATA and InterLATA traffic, and Tandem switches that serve a combination of local, IntraLATA and InterLATA traffic. **SBC-13STATE**'s network architecture in any given local exchange area and/or LATA can vary markedly from another local exchange area/LATA. Using one or more of the NIMs herein, the Parties will agree to a physical architecture plan for a specific Interconnection area. Due to differing state regulatory calling scope requirements, **SBC-SWBT** requires Interconnection in each local exchange area, while **SNET**, **PACIFIC**, **NEVADA** and **SBC-AMERITECH** require Interconnection at all Tandems in a LATA. CLEC and **SBC-13STATE** agree to Interconnect their networks through existing and/or new Interconnection facilities between CLEC switch(es) and **SBC-13STATE** End Office(s) and/or Tandem switch(es). The physical architecture plan will, at a minimum, include the location of CLEC's switch (es) and **SBC-13STATE**'s End Office switch(es) and/or Tandem switch(es) to be interconnected, the facilities that will connect the two networks and which Party will provide (be financially responsible for) the Interconnection facilities. At the time of implementation in a given local exchange area the plan will be documented and signed by appropriate representatives of the Parties, indicating their mutual agreement to the physical architecture plan.

- 2.2 Points of Interconnection (POIs): A Point of Interconnection (POI) is a point in the network where the Parties deliver Interconnection traffic to each other, and also serves as a demarcation point between the facilities that each Party is responsible to provide. In many cases, multiple POI(s) will be necessary to balance the facilities investment and provide the best technical implementation of Interconnection requirements to each Tandem within and exchange area and/or LATA. Both parties shall negotiate the architecture in each location that will seek to mutually minimize and equalize investment.
- 2.3 The Parties agree to meet as often as necessary to negotiate the selection of new POIs. The overall goal of POI selection will be to achieve a balance in the provision of facilities that is fair to both Parties. Criteria to be used in determining POIs for each geography (LATA, tandem area, etc.) include existing facility capacity, location of existing POIs, traffic volumes, relative costs, future capacity needs, etc. Agreement to the location of POIs is based on the network architecture existing at the time the POI(s) is/are negotiated. In the event either Party makes subsequent changes to its network architecture, including but not limited to trunking changes or adding new switches, then the Parties will negotiate new POIs. The mutually agreed to POIs will be documented and distributed to both Parties.
- 2.4 Each Party is responsible for the facilities to its side of the POI(s) and may utilize any method of Interconnection described in this Appendix. Each Party is responsible for the appropriate sizing, operation, and maintenance of the transport facility to the POI(s). At least one POI must be established within the geographic area where **SBC-13STATE** operates as an incumbent LEC and CLEC has a switch and End Users in that area.
- 2.5 Either Party, must provide thirty (30) days written notice prior to making any changes to the physical architecture plan.
- 2.6 In each LATA the Parties agree to provide, at a minimum, sufficient facilities so that a local Interconnection trunk group can be established from the CLEC switch to each **SNET**, **PACIFIC**, **NEVADA**, **SBC-AMERITECH** Access Tandem where CLEC originates or terminates local and/or toll traffic with **SBC-13STATE**.
- 2.7 CLEC is solely responsible for the facilities that carry OS/DA, 911 or mass calling.
- 2.8 If CLEC has established Collocation in a **SBC-13STATE** End Office, direct End Office trunks to that End Office shall be provisioned over CLEC Collocation facility. If CLEC has not established Collocation in a **SBC-13STATE** End Office,

SBC-13STATE shall provision the facilities for the direct End Office trunks from the POI to the **SBC-13STATE** End Office.

2.9 Technical Interfaces

2.9.1 The Interconnection facilities provided by each Party shall be formatted as mutually agreed to by the Parties using the B8ZS with Extended Superframe format framing where technically feasible or Alternative Mark Inversion (AMI) line code with Superframe format framing.

2.9.2 Electrical handoffs at the POI(s) will be DS1 or DS3 as mutually agreed to by the parties. When a DS3 handoff is agreed to by the Parties, **SBC-13STATE** will provide any multiplexing required for DS1 facilities or trunking at their end and CLEC will provide any DS1 multiplexing required for facilities or trunking at their end at no cost.

3. METHODS OF INTERCONNECTION

3.1 Physical Collocation Interconnection

3.1.1 When CLEC provides their own facilities or uses the facilities of a 3rd party to a **SBC-13STATE** Tandem or End Office and wishes to place their own transport terminating equipment at that location, CLEC may Interconnect using the provisions of Physical Collocation as set forth in Appendix Collocation or applicable state tariff.

3.2 Virtual Collocation Interconnection

3.2.1 When CLEC provides their own facilities or uses the facilities of a 3rd party to a **SBC-13STATE** Tandem or End Office and wishes for **SBC-13STATE** to place transport terminating equipment at that location on the CLEC's behalf, they may Interconnect using the provisions of Virtual Collocation as set forth in Appendix Collocation or applicable tariff. Virtual Collocation allows CLEC to choose the equipment vendor and does not require that CLEC be Physically Collocated.

3.3 Leased Facility Interconnection ("LFI")

3.3.1 Where facilities exist, either Party may lease facilities from the other Party as defined in Section 6 of this Appendix.

3.4 Fiber Meet Interconnection

- 3.4.1 Fiber Meet Interconnection between **SBC-13STATE** and CLEC can occur at any mutually agreeable, economically and technically feasible point between CLEC's premises and a **SBC-13STATE** Tandem or End Office within each local exchange (**SBC-SWBT**) or LATA (**SBC-AMERITECH**, **SNET**, **PACIFIC**, and **NEVADA**).
- 3.4.2 Where the Parties interconnect their networks pursuant to a Fiber Meet, the Parties shall jointly engineer and operate this Interconnection as a single point-to-point linear chain system. Only Interconnection trunks shall be provisioned over this facility.
- 3.4.3 Neither Party will be allowed to access the Data Communications Channel ("DCC") of the other Party's Fiber Optic Terminal (FOT). The Fiber Meet will be designed so that each Party may, as far as is technically feasible, independently select the transmission, multiplexing, and fiber terminating equipment to be used on its side of the POI(s). The Parties will work cooperatively to achieve equipment and vendor compatibility of the FOT equipment. Requirements for such Interconnection specifications will be defined in joint engineering planning sessions between the Parties. The Parties may share the investment of the fiber as mutually agreed. The Parties will use good faith efforts to develop and agree on these facility arrangements within ninety (90) days of the determination by the Parties that such specifications shall be implemented, and in any case, prior to the establishment of any Fiber Meet arrangements between them.
- 3.4.4 There are four basic Fiber Meet design options. The option selected must be mutually agreeable to both Parties. Additional arrangements may be mutually developed and agreed to by the Parties pursuant to the requirements of this section.
- 3.4.4.1 Design One: CLEC's fiber cable (four fibers) and **SBC-13STATE**'s fiber cable (four fibers) are connected at an economically and technically feasible point between the CLEC and **SBC-13STATE** locations. This Interconnection point would be at a mutually agreeable location approximately midway between the two. The Parties fiber cables would be terminated and then cross connected on a fiber termination panel as discussed below under the Fiber Termination Point options section. Each Party would supply a fiber optic terminal at their respective end. The POI would be at the fiber termination panel at the mid-point meet.

- 3.4.4.2 Design Two: CLEC will provide fiber cable to the last entrance (or **SBC-13STATE** designated) manhole at the **SBC-13STATE** Tandem or End Office switch. **SBC-13STATE** shall make all necessary preparations to receive and to allow and enable CLEC to deliver fiber optic facilities into that manhole. CLEC will provide a sufficient length of Optical Fire Resistant (OFR) cable for **SBC-13STATE** to pull the fiber cable through the **SBC-13STATE** cable vault and terminate on the **SBC-13STATE** fiber distribution frame (FDF) in **SBC-13STATE**'s office. CLEC shall deliver and maintain such strands wholly at its own expense up to the POI. **SBC-13STATE** shall take the fiber from the manhole and terminate it inside **SBC-13STATE**'s office on the FDF at **SBC-13STATE**'s expense. In this case the POI shall be at the **SBC-13STATE** designated manhole location.
- 3.4.4.3 Design Three: **SBC-13STATE** will provide fiber cable to the last entrance (or CLEC designated) manhole at the CLEC location. CLEC shall make all necessary preparations to receive and to allow and enable **SBC-13STATE** to deliver fiber optic facilities into that manhole. **SBC-13STATE** will provide a sufficient length of Optical Fire Resistant (OFR) cable for CLEC to run the fiber cable from the manhole and terminate on the CLEC fiber distribution frame (FDF) in CLEC's location. **SBC-13STATE** shall deliver and maintain such strands wholly at its own expense up to the POI. CLEC shall take the fiber from the manhole and terminate it inside CLEC's office on the FDF at CLEC's expense. In this case the POI shall be at the CLEC designated manhole location.
- 3.4.4.4 Design Four: Both CLEC and **SBC-13STATE** each provide two fibers between their locations. This design may only be considered where existing fibers are available and there is a mutual benefit to both Parties. **SBC-13STATE** will provide the fibers associated with the "working" side of the system. CLEC will provide the fibers associated with the "protection" side of the system. The Parties will work cooperatively to terminate each other's fiber in order to provision this joint point-to-point linear chain SONET system. Both Parties will work cooperatively to determine the appropriate technical handoff for purposes of demarcation and fault isolation. The POI will be defined as being at the **SBC-13STATE** location.
- 3.4.5 CLEC location includes FOTs, multiplexing and fiber required to terminate the optical signal provided from **SBC-13STATE**. This location is CLEC's responsibility to provision and maintain.

- 3.4.6 The **SBC-13STATE** location includes all **SBC-13STATE** FOT, multiplexing and fiber required to terminate the optical signal provided from CLEC. This location is **SBC-13STATE**'s responsibility to provision and maintain.
- 3.4.7 **SBC-13STATE** and CLEC shall, solely at their own expense, procure, install, and maintain the agreed-upon FOT equipment in each of their locations where the Parties established a Fiber Meet in capacity sufficient to provision and maintain all trunk groups prescribed by Appendix ITR for the purposes of Interconnection.
- 3.4.8 Each Party shall provide its own, unique source for the synchronized timing of its FOT equipment. Each timing source must be Stratum-1 traceable and cannot be provided over DS0/DS1 facilities, via Line Timing; or via a Derived DS1 off of FOT equipment. Both Parties agree to establish separate and distinct timing sources which are not derived from the other, and meet the criteria identified above.
- 3.4.9 CLEC and **SBC-13STATE** will mutually agree on the capacity of the FOT(s) to be utilized based on equivalent DS1s or DS3s. Each Party will also agree upon the optical frequency and wavelength necessary to implement the Interconnection. The Parties will develop and agree upon methods for the capacity planning and management for these facilities, terms and conditions for over provisioning facilities, and the necessary processes to implement facilities as indicated below. These methods will meet quality standards as mutually agreed to by CLEC and **SBC-13STATE**.

3.5 **Other Interconnection Methods**

- 3.5.1 Other Interconnection methods that are technically feasible may be mutually agreed to by the Parties.

VII. 4. RESPONSIBILITIES OF THE PARTIES

- 4.1 If CLEC determines to offer local Interconnection within an **SBC-13STATE** area, CLEC shall provide written notice to **SBC-13STATE** of the need to establish Interconnection in each local exchange area (**SBC-SWBT**) or LATA (**PACIFIC, NEVADA, SNET, and SBC-AMERITECH**). Such request shall include (i) CLEC's Switch address, type of Switch and CLI code; (ii) CLEC's requested Interconnection activation date; and (iii) a non-binding forecast of CLEC's trunking and facilities requirements.
- 4.2 Upon receipt of CLEC's notice to interconnect, the Parties shall schedule a meeting to negotiate and mutually agree on the network architecture (including

trunking) to be documented as discussed in Section 2.1. The Interconnection activation date for an Interconnect shall be established based on then-existing force and load, the scope and complexity of the requested Interconnection and other relevant factors.

- 4.3 If CLEC deploys additional switches in a LATA after the Effective Date or otherwise wishes to establish Interconnection with additional **SBC-13STATE** Central Offices, CLEC shall provide written notice to **SBC-13STATE**, to establish such Interconnection. The terms and conditions of this Agreement shall apply to such Interconnection. If **SBC-13STATE** deploys additional Tandems and/or End Office switches in a local exchange/LATA after the effective date or otherwise wishes to establish Interconnection with additional CLEC Central Offices in such local exchange/LATA, **SBC-13STATE** shall be entitled, upon written notice to CLEC, to establish such Interconnection and the terms and conditions of this Agreement shall apply to such Interconnection.
- 4.4 CLEC and **SBC-13STATE** shall work cooperatively to install and maintain a reliable network. CLEC and **SBC-13STATE** shall exchange appropriate information (e.g., maintenance contact numbers, network information, information required to comply with law enforcement and other security agencies of the Government and such other information as the Parties shall mutually agree) to achieve this desired reliability.
- 4.5 CLEC and **SBC-13STATE** will review engineering requirements on a semi-annual basis and establish non-binding forecasts for facilities utilization provided under this Appendix.
- 4.6 CLEC and **SBC-13STATE** shall:
 - 4.6.1 Provide trained personnel with adequate and compatible test equipment to work with each other's technicians.
 - 4.6.2 Notify each other when there is any change affecting the service requested, including the due date.
 - 4.6.3 Recognize that a facility handoff point must be agreed to that establishes the demarcation for maintenance and provisioning responsibilities for each party on their side of the POI.

5. JOINT FACILITY GROWTH PLANNING

VIII.

- 5.1 The initial fiber optic system deployed for each Interconnection shall be agreed to by the Parties. The following lists the criteria and processes needed to satisfy additional capacity requirements beyond the initial system.

5.2 Criteria:

- 5.2.1 Investment is to be minimized.
- 5.2.2 Facilities will be planned for in accordance with the non-binding trunk forecasts exchanged between the Parties as described in Appendix ITR and are to be deployed in accordance with the Processes described below.

5.3 Processes:

- 5.3.1 In addition to the semi-annual non-binding forecast process, discussions to provide relief to existing facilities can be initiated by either party. Actual system augmentations will be initiated upon mutual agreement.
- 5.3.2 Both Parties will perform a joint validation to ensure current Interconnection facilities and associated trunks have not been over-provisioned. If any facilities and/or associated trunks are over-provisioned, they will be turned down where appropriate based on mutual consent of the Parties. Trunk design blocking criteria described in Appendix ITR will be used in determining trunk group sizing requirements and forecasts.
- 5.3.3 If based on the forecasted equivalent DS-1 growth where the existing fiber optic system is not projected to exhaust within one year, the Parties will suspend further relief planning on this Interconnection until a date one year prior to the projected exhaust date. If growth patterns change during the suspension period, either Party may re-initiate the joint planning process.
- 5.3.4 If the placement of a minimum size system will not provide adequate augmentation capacity for the joint forecast over a two-year period and the forecast appears reasonable, the next larger system or an appropriately sized system will be deployed. If the forecast does not justify a move to the next larger system, another appropriately sized system could be placed. This criteria assumes both Parties have adequate fibers for either scenario. If adequate fibers do not exist, both Parties would negotiate placement of additional fibers.
- 5.3.5 Both Parties will negotiate a project service date and corresponding work schedule to construct relief facilities prior to facilities exhaust.
- 5.3.6 The joint planning process/negotiations should be completed within two months of the initiation of such discussion.

6. LEASING OF FACILITIES

- 6.1 The purpose of this section is to cover both CLEC's and **SBC-SWBT, PACIFIC** and **NEVADA** leasing of facilities from each other for purposes of Interconnection. **SBC-AMERITECH** and **SNET** offers leased facilities from the applicable Access Tariff.
- 6.2 The Parties leasing of facilities from each other for purposes of this Appendix will be subject to mutual agreement of the Parties.
- 6.3 Leasing of facilities from either party for the above purposes and any future augmentations are subject to facility availability at the time of the written request.
- 6.4 The requesting Party will provide a written leased facility request that will specify the A- and Z-ends (CLLI codes, where known), equipment and multiplexing required and provide quantities requested. Requests for leasing of facilities for the purposes of Interconnection and any future augmentations are subject to facility availability at the time of the request. Applicable rates, terms and conditions will be determined at the time of the request.
- 6.5 Any request by either Party for leased facilities where facilities, equipment, or riser cable do not exist will be considered and the requested Party may agree to provide under a Bona Fide Request (BFR) Process as defined below, unless otherwise provided out of a tariff, at the providing Party's sole discretion:
- 6.5.1 A BFR will be submitted by the requesting Party in writing and will include a description of the facilities needed including the quantity, size (DS1 or DS3), A- and Z-end of the facilities, equipment and multiplexing requirements, and date needed.
- 6.5.2 The requesting Party may cancel a BFR at any time, but will pay the requested Party any reasonable and demonstrable costs of processing and/or implementing the BFR up to the date of cancellation.
- 6.5.3 Within ten (10) business days of its receipt, the requested Party will acknowledge receipt of the BFR as well as inform requesting party if the BFR is not the correct process for the Request, and in such acknowledgement advise requesting Party of any further information needed to process the Request.
- 6.5.4 Except under extraordinary circumstances, within thirty (30) business days of its receipt of a BFR, the requested Party will provide to the requesting Party a written response to the request. The response will confirm whether the leased facilities will be offered or not. If the leased facilities will be

offered, the requested Party will provide the requesting Party a BFR quote which will include the applicable recurring rates and installation intervals.

- 6.5.5 Within 65 calendar days of its receipt of the BFR quote, the requesting Party must confirm its order. If not confirmed within 65 calendar days, the requested Party reserves the right to modify or withdraw its BFR quote.

7. APPLICABILITY OF OTHER RATES, TERMS AND CONDITIONS

- 7.1 Every interconnection, service and network element provided hereunder, shall be subject to the applicable rates, terms and conditions contained in this Agreement. The parties recognize that provisions in the General Terms and Conditions apply to services, interconnections and network elements provided under individual appendices or attachments to this Agreement. The parties further agree that this acknowledgment that the General Terms and Conditions apply to individual appendices is not intended to and does not limit, condition or void a third party's rights under 47 U.S.C. Section 252(i).